4.12 Transportation/Traffic

This section of the EIR includes an analysis of the impacts related to transportation and traffic, including traffic generation, air traffic, traffic hazards, and emergency access as a result of implementation of the Master Plans.

As discussed in Chapter 4, Environmental Analysis, the following CIP projects have been adequately addressed in previous CEQA documents and are not included in this analysis: Sewer CIP Projects SR-6, SR-10, SR-25, N-1, N-2, N-5, N-7, N-8, N-10, N-11, I-3, I-4, I-5, and I-6; Water CIP Projects 7, 8, 40, and R6; and Recycled Water CIP Project ES3.

4.12.1 Environmental Setting

Due to existing topographic constraints, including steep slopes and lagoons, Carlsbad has developed a meandering circulation network that takes advantage of the natural landform features. The Interstate 5 and SR-78 bring regional traffic into and through the city. Several of Carlsbad's existing major arterials also carry through traffic as well as local traffic. Carlsbad contains three major arterial roads including El Camino Real which runs north/south through the center of the city, Palomar Airport Road which runs east/west through the center of the city, and Rancho Santa Fe Road which runs along the southern and easterly boundary of the city. Most city streets are paved with curbs and gutters, and water and sewer pipelines are usually located in public street rights-of-way for easy access and maintenance. Private roadways and easements are also sometimes used to provide access to the various water and sewer facilities.

The portions of the Oceanside, San Marcos, and Vista within the study area have similar circulation patterns as Carlsbad, including major arterials that provide access to smaller collector roads and private residential. Roads in these cities are also meandering due to hilly topography. Melrose Drive is a major arterial that runs north to south and traverses the entire study area outside of the Carlsbad boundary. Major arterials that run east to west include Sycamore Avenue, San Marcos Boulevard, and Rancho Santa Fe Road.

Transit service is provided to Carlsbad, Oceanside, San Marcos, and Vista by the North County Transit District (NCTD). Transit services provided in the study area include the Breeze bus service and the Coaster rail line. The Coaster shares the AT&SF railroad line that traverses the city from north to south along the coast. In addition, Carlsbad has McClellan-Palomar Airport, a commercial general aviation basic transport airport located in the central portion of the city adjacent to the intersection of Palomar Airport Road and El Camino Real. Oceanside has Oceanside Municipal Airport, a public airport for general aviation located within the city of Oceanside, approximately 500 feet north of the proposed site for Water CIP Project 52.

4.12.2 Regulatory Framework

4.12.2.1 Federal

Americans with Disabilities Act

The 1990 Americans with Disabilities Act (ADA) is a wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability. Pedestrian facility design must comply with

the accessibility standards identified in the ADA, which applies to all projects involving new or altered pedestrian facilities. The scoping and technical provisions for new construction and alterations identified in the ADA Accessibility Guidelines can be used to help design pedestrian facilities that are ADA compliant. For example, Title II-6.600 of the Technical Assistance Manual states, "When streets, roads, or highways are newly built or altered, they must have ramps or sloped areas whenever there are curbs or other barriers to entry from a sidewalk or path."

4.12.2.2 State

California Department of Transportation Standards

The California Department of Transportation (Caltrans) is responsible for planning, designing, building, operating, and maintaining California's state road system. Caltrans sets standards, policies, and strategic plans that aim to do the following: 1) provide the safest transportation system in the nation for users and workers, 2) maximize transportation system performance and accessibility, 3) efficiently deliver quality transportation projects and services, 4) preserve and enhance California's resources and assets, and 5) promote quality service. Caltrans has the discretionary authority to issue special permits for the use of state highways for other than normal transportation purposes. Caltrans also reviews all requests from utility companies, developers, volunteers, nonprofit organizations, and others desiring to conduct various activities within state highway rights-of-way. The Caltrans Highway Design Manual, prepared by the Office of Geometric Design Standards (Caltrans 2009), establishes uniform policies and procedures to carry out highway design functions. Caltrans has also prepared a Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). Objectives for the preparation of this guide include providing consistency and uniformity in the identification of traffic impacts generated by local land use proposals.

4.12.2.3 Regional

2050 Regional Transportation Plan

The San Diego Association of Governments adopted the 2050 Regional Transportation Plan on October 28, 2011. The 2050 Plan maps out a system designed to maximize transit enhancements, integrate biking and walking elements, and promote programs to reduce demand and increase efficiency. The 2050 Plan also identifies the plan for investing in local, state and federal transportation facilities in the region over the next 40 years.

2010 Regional Transportation Improvement Program

The Regional Transportation Improvement Plan (RTIP) is a multi-year program of proposed major highway, arterial, transit, and bikeway projects. The 2010 RTIP is a prioritized program designed to implement the region's overall strategy for providing mobility and improving the efficiency and safety of efforts to attain federal and state air quality standards for the region. The 2010 RTIP also incrementally implements the latest update to the Regional Transportation Plan. The 2010 RTIP covers fiscal years 2011 to 2015. The 2010 RTIP, including an air quality emissions analysis for all regionally significant projects, was adopted on December 14, 2010.

4.12.2.4 Local

City of Carlsbad Standard Traffic Control Plan

The Carlsbad Traffic Division reviews traffic control plans to balance the safety of construction workers with the need to minimize delays for drivers. The Standard Traffic Control Plan recommended by the Traffic Division includes diagrams of the anticipated lane, shoulder, and sidewalk closures. The diagrams detail the construction work area, sign and barricade locations, and the proposed traffic route. A list of signs to be used is also included, as well as a list of procedures that will be implemented during construction, such as work hour restrictions, and a time limit for replacing striping in the roadway.

City of Oceanside Traffic Control Plan

The Transportation Section of the Oceanside Engineering Division has established contractor's obligations for preparation of traffic control plans. Among other requirements, all traffic control plans must be prepared in accordance with the California Manual of Traffic Controls for Construction and Maintenance Work Zones. The completed traffic control plan application must be submitted 14 calendar days prior to beginning of work. Any work which creates an undue safety hazard or unreasonable traffic congestion will be shut down by the City. The contractor is also responsible for restoring the roadway back to satisfactory condition which will include, but is not limited to, paving, striping, pavement markings, signing, traffic signal loop detectors, and removing all markouts from all surfaces in the public right-of-way within thirty days of the completion of the excavation work.

City of Vista Traffic Control Plan

The Vista Traffic Engineering Department requires a Traffic Control Plan to be prepared for any construction activity or special event that will disrupt traffic flow on city streets. The plan must be prepared in accordance with Caltrans guidelines.

4.12.3 Project Impacts and Mitigation

4.12.3.1 Issue 1: Traffic and LOS Standards

Transportation/Traffic Issue 1 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, or conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact: Implementation of a traffic control plan would ensure that construction of the proposed CIP projects would not interfere with the circulation network.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts are less than significant without mitigation.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, the Master Plans would result in a significant impact if implementation would result in a conflict with an applicable plan, ordinance or policy, or congestion management program. Applicable plans, ordinances, and policies are those that establish measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Congestion management programs include, but are not limited to, level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways. Based on the Carlsbad Growth Management Program, the level of service standard for circulation is that no road segment or intersection potentially impacted by development shall be projected to exceed a service level C during off-peak hours, or service level D during peak hours.

Impact Analysis

The potential for the proposed Master Plans to generate new vehicular traffic during construction and operation is discussed below.

Construction

Construction of the proposed Master Plan CIP projects would generate construction-related trips from trucks hauling soil and/or debris from the construction sites; trucks delivering equipment and materials to/from the construction sites; and construction workers driving to/from the construction sites. These localized increases in construction traffic would be temporary. Construction of the CIP projects would not occur all at once, and would be phased through the year 2035. Construction would take place throughout the study area so that even if multiple CIP construction projects are underway simultaneously, construction would not be concentrated in one area. Construction traffic would only affect a limited area of the city in which they were located for a short time during construction of a particular CIP project. Construction projects would not be expected to generate an increase in vehicular trips that would degrade the level of service (LOS) on surrounding roadways to below an acceptable level.

Some CIP projects, particularly the removal and installation of pipelines, would require construction within the public right-of-way. Staging and storage areas may also be located in a portion of the public right-of-way. Potential impacts include disruption of traffic from lane closures, detours, increased truck and other construction-related traffic, and disruption of access to local businesses and residences in some cases. These types of impacts may affect local circulation during the short-term course of construction activities. The City and CMWD will implement the following design feature, listed in Section 2.6.2, Project Design Features, Transportation/Traffic, to minimize such impacts:

- Prior to construction, the City will prepare a traffic control plan and coordinate with the cities of Oceanside, Vista, and San Marcos to address traffic during construction of project components within the public right-of-ways of the affected jurisdiction(s), including bicycle, pedestrian, and transit facilities. The traffic control plan will include signage and flagmen when necessary to allow the heavy equipment to utilize residential streets. The traffic control plan will also include provisions for coordinating with local school hours and emergency service providers regarding construction times.

Implementation of the traffic control plan would reduce potential impacts during construction to a less than significant level.

Operation

Permanent traffic associated with operation of the Master Plans CIP projects would occur primarily from vehicular trips by employees. However, operation of projects proposed under the Master Plans would not generate a significant volume of new vehicle trips. The majority of the proposed CIP projects are underground pipelines, improvements to existing facilities, or the construction of new facilities on existing CMWD or City property in Carlsbad, Oceanside, San Marcos, and Vista. Following construction, the underground pipelines would be passive and would not require regular maintenance. Occasional vehicle trips may be required for repair or inspection, similar to existing pipelines. Existing CMWD and City facilities require vehicle trips for maintenance. New facilities or improvements at these locations would not result in new maintenance vehicle trips. The proposed groundwater pump (Water CIP Project 51) and treatment facility (Water CIP Project 52) would require regular maintenance trips; however, the Simsbury lift station and Vancouver lift station (Sewer CIP Project SR-11) would be removed and would no longer require maintenance trips. Therefore, the Master Plans would not generate a substantial net increase in vehicle trips. Any incremental increases in vehicle trips would be distributed on roadways throughout the sewer, water, and recycled water service areas and would not be substantial in relation to the existing traffic load and capacity of intersections, street segments and freeways within the study area. Implementation of the proposed Master Plans would not result in long-term impacts to traffic. The Master Plans would not degrade the traffic level of service in the study area or conflict with any applicable plans establishing measures of effectiveness for the performance of a circulation system and would not conflict with any applicable congestion management program.

Mitigation Measures

Impact related to traffic and LOS standards would be less than significant. No mitigation is required.

Significance After Mitigation

Impact related to traffic and LOS standards would be less than significant without mitigation.

4.12.3.2 Issue 2: Air Traffic

Transportation/Traffic Issue 2 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Impact: Implementation of the proposed Master Plans would not result in a change in air traffic patterns.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts are less than significant without mitigation.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, a significant impact would occur if implementation of the Master Plans would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Impact Analysis

Implementation of the Master Plans would not involve the construction of facilities that would require changes in air traffic patterns from increased traffic levels, location or design. Impacts would be less than significant.

Mitigation Measures

Impacts related to air traffic patterns would be less than significant. No mitigation is required.

Significance After Mitigation

Impacts related to air traffic patterns would be less than significant without mitigation.

4.12.3.3 Issue 3: Increase in Traffic Hazards

Transportation/Traffic Issue 3 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact: None of the proposed CIP projects include features that would increase traffic hazards or result in incompatible uses. Further, implementation of the traffic control plan as a required CIP project feature would minimize traffic hazards during construction.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts are less than significant without mitigation.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, a significant impact would occur if implementation of the Master Plans would substantially increase hazards due to a design feature or incompatible uses.

Impact Analysis

Implementation of the Master Plans would involve planning sewer, water, and recycled water facilities; it would not involve any roadway or intersection improvements, or involve any uses that are not

compatible with the surrounding area. The majority of CIP projects would be located underground or on CMWD or City property in Carlsbad, Oceanside, San Marcos, and Vista that contains existing infrastructure facilities. Water CIP Project F14 proposes a new pump station in an area that does not contain existing infrastructure; however, the pump station would be enclosed, screened from surrounding development, and would not include any components that would create a potential transportation hazard. The Master Plans would not result in a permanent increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

As described in Section 4.12.2.1 (Issue 1), construction activities would require lane closures or sidewalk closures which could result in short-term impacts to traffic patterns and result in temporary traffic congestion and potential traffic hazards. Construction of the various components would also cause temporary disruption of access to residences and businesses along the construction route. Consequently, portions of the affected roadway links may require detours or flagger assistance to maintain acceptable operation of the roadways, and access to all properties. Closing or altering access to individual properties and lane closures would create potential hazards. However, implementation of the traffic control plan described in Section 2.6.2 (Project Design Features) including coordination with emergency service providers would ensure that significant impacts would not occur during construction of any of the proposed CIP projects. Therefore, implementation of the proposed Master Plans would result in a less than significant impact associated with traffic safety hazards.

Mitigation Measures

Impacts related to traffic hazards would be less than significant. No mitigation is required.

Significance After Mitigation

Impacts related to traffic hazards would be less than significant without mitigation.

4.12.3.4 Issue 4: Alternative Transportation

Transportation/Traffic Issue 4 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Impact: Implementation of the Master Plans would not disrupt alternative modes of transportation during construction or operation of the proposed CIP projects.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts are less than significant without mitigation.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, a potentially significant impact would occur if implementation of the Master Plans would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Impact Analysis

Pedestrian and bicycle facilities and public transit could be temporarily affected if a CIP project requires a roadway lane closure, but facilities would not be permanently affected by implementation of the Master Plans. Therefore, the Master Plans would not conflict with policies or programs regarding public transit, bicycle, or pedestrian facilities or otherwise permanently decrease the access, performance, or safety of such facilities. As discussed in Section 4.12.3.1 and Section 4.12.3.3 (Issues 1 and 3), lane and sidewalk enclosures during construction would have the potential to decrease the performance or safety of alternative transportation facilities. However, implementation of the traffic control plan described in Section 2.6.2 (Project Design Features) would ensure that significant impacts would not occur during construction of any of the proposed CIP projects.

Mitigation Measures

Impacts related to alternative transportation would be less than significant. No mitigation is required.

Significance After Mitigation

Impacts related to alternative transportation would be less than significant without mitigation.

4.12.3.5 Issue 5: Emergency Access

Transportation/Traffic Issue 5 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans result in inadequate emergency access?

Impact: Implementation of the Master Plans would not disrupt emergency access during construction or operation.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts are less than significant without mitigation.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, a potentially significant impact would occur if implementation of the Master Plans would result in inadequate emergency access.

Impact Analysis

Emergency access could be temporarily affected if a CIP project requires a roadway lane closure, which would restrict access the area surrounding the construction sites, but roadways would not be permanently affected by implementation of the Master Plans. Lane closures during construction would have the potential to result in inadequate emergency access. However, implementation of the traffic control plan described in Section 2.6.2 (Project Design Features), including coordination with emergency service providers, would ensure that significant impacts would not occur during construction of any of the proposed CIP projects.

Mitigation Measures

Impacts related to emergency access would be less than significant. No mitigation is required.

Significance After Mitigation

Impacts related to emergency access would be less than significant without mitigation.

4.12.4 Cumulative Impacts

Transportation/Traffic Cumulative Issue Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans have a cumulatively considerable contribution to a cumulative transportation/traffic impact considering past, present, and probable future projects?

Cumulative Impact	Significant?	Project Contribution
Decrease in level of service of transportation network.	Yes	Not cumulatively considerable.
Air Traffic	No	Not cumulatively considerable.
Increase in Traffic Hazards	Yes	Not cumulatively considerable.
Decrease in level of service or safety of alternative transportation	Yes	Not cumulatively considerable.
Emergency Access	Yes	Not cumulatively considerable.

4.12.4.1 Traffic and LOS Standards

The geographic scope of the cumulative analysis related to traffic and LOS standards consists of the sewer, water, and recycled water service areas. Cumulative growth in the service areas would result in new land uses including residential and commercial development that would have the potential to increase traffic congestion. Therefore, a potentially significant cumulative impact would occur. However, implementation of the Master Plans would result in a negligible amount of new traffic and would not result in a permanent impact to the regional transportation network. The Master Plans would not result in cumulatively considerable contribution to a significant cumulative impact.

4.12.4.2 Air Traffic

Impacts related to aircraft traffic are generally specific and limited to the area within two miles of a specific airport. Location of one CIP project within the overflight area of an airport would not increase the potential for another CIP project to interfere with air traffic at another site. Therefore, the construction and operation of CIP projects under the Master Plans, in combination with the cumulative projects, would not result in a significant cumulative impact related to air traffic.

4.12.4.3 Increase in Traffic Hazards

The geographic context for the analysis of cumulative impacts relative to traffic hazards is the sewer, water, and recycled water service areas. Cumulative development would have the potential to result in a cumulative impact related to traffic hazards if construction or operation of cumulative development would impair emergency access routes or create a traffic hazards on roadways within the vicinity of other development. Following construction, CIP projects would generally be required to demonstrate that the project complies with Caltrans and the City requirements for roadway design in order to obtain project approval. However, construction throughout the service areas would have the potential to result in temporary, construction-related lane and road closures or detours. A temporary potentially significant cumulative impact would occur. With implementation of a traffic control plan, the Master Plans would not increase traffic hazards and would not result in a cumulatively considerable contribution to this cumulative impact.

4.12.4.4 Alternative Transportation

The geographic scope of the cumulative analysis related to alternative transportation is the sewer, water, and recycled water service areas. Cumulative growth in the services areas would result in new land uses including residential and commercial development that would have the potential to create hazards to pedestrian and bicycle facilities. A potentially significant cumulative impact would occur. However, implementation of the Master Plans would not result in a permanent impact to the regional transportation network. The Master Plans would not result in cumulatively considerable contribution to a significant cumulative impact.

4.12.4.5 Emergency Access

The geographic context for the analysis of cumulative impacts relative to emergency access is the sewer, water, and recycled water service areas. Cumulative development would result in a cumulative impact if it temporarily or permanently impedes the availability of emergency access routes. Following construction, projects would generally be required to demonstrate that adequate emergency access is provided or maintained in order to obtain project approval. Similar to the Master Plans, construction of cumulative projects throughout the service areas would have the potential to result in temporary, construction-related lane and road closures or detours. A temporary potentially significant cumulative impact would occur. However, with implementation of a traffic control plan, the Master Plans would not impair or interfere with emergency access and would not result in a cumulatively considerable contribution to this cumulative impact.

4.12.5 References

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